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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,045	09/08/2000	Atsushi Murashima	P/1878-163	2545

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EXAMINER	
LERNER, MARTIN	
ART UNIT	**PAPER NUMBER**
2654	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/658,045	MURASHIMA, ATSUSHI	
	Examiner	Art Unit	
	Martin Lerner	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 to 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2 to 19* is/are allowed.

6)☒ Claim(s) *1* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by *Jarvinen et al.*

Regarding independent claim 1, *Jarvinen et al.* discloses a method and apparatus for generating comfort noise by decoding speech, comprising:

"calculating a norm of said excitation signal for each fixed period" – the random excitation gain $g_{cn}(j)$ is computed for each subframe, based on the energy of the LP residual signal of the subframe, according to equation (10); random excitation gain $g_{cn}(j)$ is an average ("norm") of the LSF prediction residual signals $r(n)$ for 39 subframes, normalized by denominator 10 and scaling factor 1.286 (column 24, lines 24 to 40); compare Equation (10) with Page 22, Line 5 of the Specification, which is Applicant's calculation for a "norm"; Merriam-Webster's Dictionary defines a "norm" as an "average";

"smoothing said calculated norm using a norm obtained in a previous period" – the computed random excitation gain values are averaged and updated in the first subframe of each frame to produce $g_{cn}^{mean}(n)$ according to Equation (11); computed

random excitation gain value $g_{cn}^{mean}(n)$ is computed based upon an average of the last six subframe values of random excitation gain $g_{cn}(j)$ ("using a norm obtained in a previous period") (column 24, lines 45 to 63); implicitly, averaging over the last six subframes produces a "smoothing" of the value for random excitation gain value $g_{cn}^{mean}(n)$ for the comfort noise;

"changing amplitude of said excitation signal in said period using said calculated norm and said smoothed norm" – in the decoder, the excitation 212 is formed by first generating the white noise excitation sequence 114 with random excitation generator 110, which is then scaled by g_{mean} in scaling block 115 (column 8, lines 40 to 47: Figure 2b); RESC-parameters drive the RE spectrum control filter 211, which, in combination with the random excitation generator 110, together designated a CN-excitation generator 210, produce an excitation sequence 212, or excitation signal (column 8, line 67 to column 9, line 28: Figure 2b); $g_{cn}^{mean}(n)$ is the "smoothed norm" and is calculated from components of $g_{cn}(j)$, "said calculated norm";

"driving said filter by said excitation signal with the changed amplitude wherein temporal fluctuation of said excitation signal is reduced" – synthesis filter 112 receives the white noise sequence from random excitation generator 110, as scaled by g_{mean} in scaling block 115; the spectrally controlled excitation 212 is then used in the speech synthesis filter 112 to produce comfort noise (column 8, line 40 to column 9, line 19: Figure 2b); implicitly, averaging excitation gain values over the past six frames would provide some degree of reducing temporal fluctuations of the excitation signal (column 24, lines 45 to 63: Equation (11)).

Allowable Subject Matter

3. Claims 2 to 19 are allowed.

4. The following is a statement of reasons for the indication of allowable subject matter:

Regarding independent claims 3 and 12, the prior art does not disclose or suggest dividing an excitation signal by a norm. Applicant's Specification, Page 21, Line 21 to Column 22, Line 15, discloses an excitation signal normalizing circuit that obtains a shape vector $s_{exc}^{(mNssfr + 1)}(i)$ by dividing excitation vector $x_{exc}^{m}(i)$ by a normalized gain $g_{exc}(m\ Nssfr +1)$. (See Equation at Page 22, Line 13) The prior art of record does not disclose or suggest a combination of dividing an excitation signal by a norm and multiplying the excitation signal by a smoothed norm.

Response to Arguments

5. Applicant's arguments filed 08 September 2004 have been fully considered but they are not persuasive.

Applicant argues *Jarvinen et al.* discloses the input signal is assumed to be white noise. Applicant notes the object of *Jarvinen et al.* is to generate comfort noise. Applicant says *Jarvinen et al.* uses a white noise input signal having a relatively small energy fluctuation, so that *Jarvinen et al.* is only effective for general signals having a relatively small fluctuation in energy and not effective for general signals having a relatively large fluctuation in energy. Applicant characterizes signals having large

energy fluctuation in the noise period as noisy environments typified by the hustle and bustle in downtown or inside a running car. Applicant maintains the Specification discloses the energy fluctuation of excitation is smoothed by an excitation normalizing circuit, a smoothing circuit, and an excitation signal restoring circuit, and states that since the energy fluctuation of excitation applied to the synthesis filter is smoothed, the invention is effective to signals having a relatively large energy fluctuation for signals in the noise period. This argument is unpersuasive for the following reasons.

Firstly, *Jarvinen et al.* discloses averaging excitation gain values over the past six frames. (Column 24, Lines 45 to 63: Equation (11)) Implicitly, averaging an excitation gain value over a time period corresponding to six frames must, at least to some degree, produce a smoothing of an excitation signal.

Secondly, it is not relevant to Applicant's claimed invention as to whether *Jarvinen et al.* is effective for only small energy fluctuations or to large fluctuations because the amount of energy fluctuation is not expressly provided by any limitations of the claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Thirdly, while it is true that *Jarvinen et al.* begins with a white noise excitation sequence to generate comfort noise, the white noise is subsequently shaped by coefficients from a speech signal. White noise generated by random excitation generator 110 is scaled by a normalized gain, g_{mean}, and then processed in a random excitation spectral control (RESC) filter 211. RESC-parameters $r_{mean}(i)$ define filter

coefficients b(i), which may be LSP coefficients. As a result, comfort noise is produced that has a correct spectral content, is suitably spectrally weighted, and is not spectrally flat. (Column 8, Line 40 to Column 9, Line 5: Figure 2b) Thus, while *Jarvinen et al.* begins with white noise to generate comfort noise, a random excitation spectral control (RESC) filter processes a white noise excitation signal with RESC-parameters to generate comfort noise that is no longer spectrally flat white noise.

Therefore, the rejection of claim 1 under 35 U.S.C. 102(e) as being anticipated by *Jarvinen et al.* is proper.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (703) 308-9064. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ML
1/21/05

Martin Lerner
Examiner
Group Art Unit 2654